

Table 3-7c
Development of Risk-Based Concentrations for Upland Soil
Ornate Shrew
Investigation Area H1 Feasibility Study
Mare Island, Vallejo, California

$$RBC_{\text{soil}} = BW \times TRV \times HQ / [(IR_{\text{prey}} \times BAF_1) + IR_{\text{soil}}] \times SUF]$$

COEC ^a	Earthworm Tissue BAF ^b	TRV (mg/kg BW-day)		RBC-Soil (mg/kg)	
		Low	High	TRV-Low	TRV-High
Inorganics					
Antimony	2.72E-01	0.06	23.4	0.80	316
Arsenic	1.84E+00	0.32	4.70	0.70	10.2
Cadmium	3.31E+00	0.06	2.64	0.073	3.2
Chromium	2.60E-01	2.40	23.10	33.7	325
Cobalt	--	1.20	20.00	163	2720
Copper	3.88E-01	2.67	632	26.1	6166
Lead	2.80E-01	1.00	241	13.2	3171
Manganese	1.68E-01	13.70	159	283	3282
Molybdenum	--	0.25	4	34	544
Mercury	--	0.26	2.6	35.4	354
Nickel	--	0.133	31.6	18.1	4298
Selenium	4.24E+00	0.05	1.21	0.048	1.2
Silver	4.83E+01	0.375	3.75	0.032	0.32
Thallium	--	0.48	1.43	65.3	194
Vanadium	1.61E-01	0.21	2.10	4.5	44.8
Zinc	7.20E-01	9.60	411	52.2	2235
Organics					
PCBs	6.69E+00	0.36	1.28	0.22	0.78
DDTs	7.27E+00	0.8	16	0.45	8.9
Benzo(a)anthracene	--	NTV	NTV	--	--
Benzo(a)pyrene	3.35E-02	1.31	32.8	84	2108
Benzo(b)fluoranthene	2.05E-02	NTV	NTV	--	--
Benzo(k)fluoranthene	--	NTV	NTV	--	--

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Exposure Assumptions and Equation:^c

	Value	Units	
IRprey(dry wt.) =	0.001299	kg/day (dry weight)	-- = Not available
IRinvertebrate(dry wt.) ^d =	0.001299	kg/day (dry weight)	NTV = No toxicity value
IRsoil (dry wt.) ^e =	0.00003897	kg-day (dry weight)	
Tissue Moisture (earthworm) ^c =	84%	percent	
Site Use Factor ^f =	100%	percent	
Body Weight =	0.0053	kg	
Hazard Quotient (HQ) =	1	unitless	

Notes:

- a - Constituent of ecological concern.
- b - Dry weight basis earthworm BAFs are preset in Table 3-6a.
- c - Exposure parameters used to calculate risk are discussed in detail in the BERA.
- d - The wet weight tissue concentrations are converted to dry weight by dividing by 1 - tissue moisture.
- Ingestion rate of sediment based on 3 percent of the prey ingestion rate (dry weight); based on short-tailed shrew
- e - (EPA, 2003).
- f - Site use factor was based on a conservative 100% use of the site for the shrew's foraging range.